2.0 ARIZONA STATEWIDE TRAVEL DEMAND MODEL SOCIOECONOMIC DATA

The Arizona Statewide Travel Demand Model (AZTDM) is a statewide travel demand model designed to identify transportation deficiencies and test multimodal improvement scenarios. This section details the methodology and sources used to prepare 2030 and 2050 population and employment databases for the model.

2.1 Statewide Transportation Planning Frameworks

ADOT divided the state into seven study areas for the development of the Statewide Transportation Planning Framework:

- Eastern Framework;
- Central Framework;
- Western Framework;
- Northern Framework;
- Hidden Valley Framework;
- Maricopa Association of Governments, which includes part of the Hidden Valley Framework area; and,
- Pima Association of Governments.

Figure 2-1 shows the locations of the seven regional framework study areas. Each of the framework study teams separately prepared the population and employment data from its area for the statewide travel demand model.

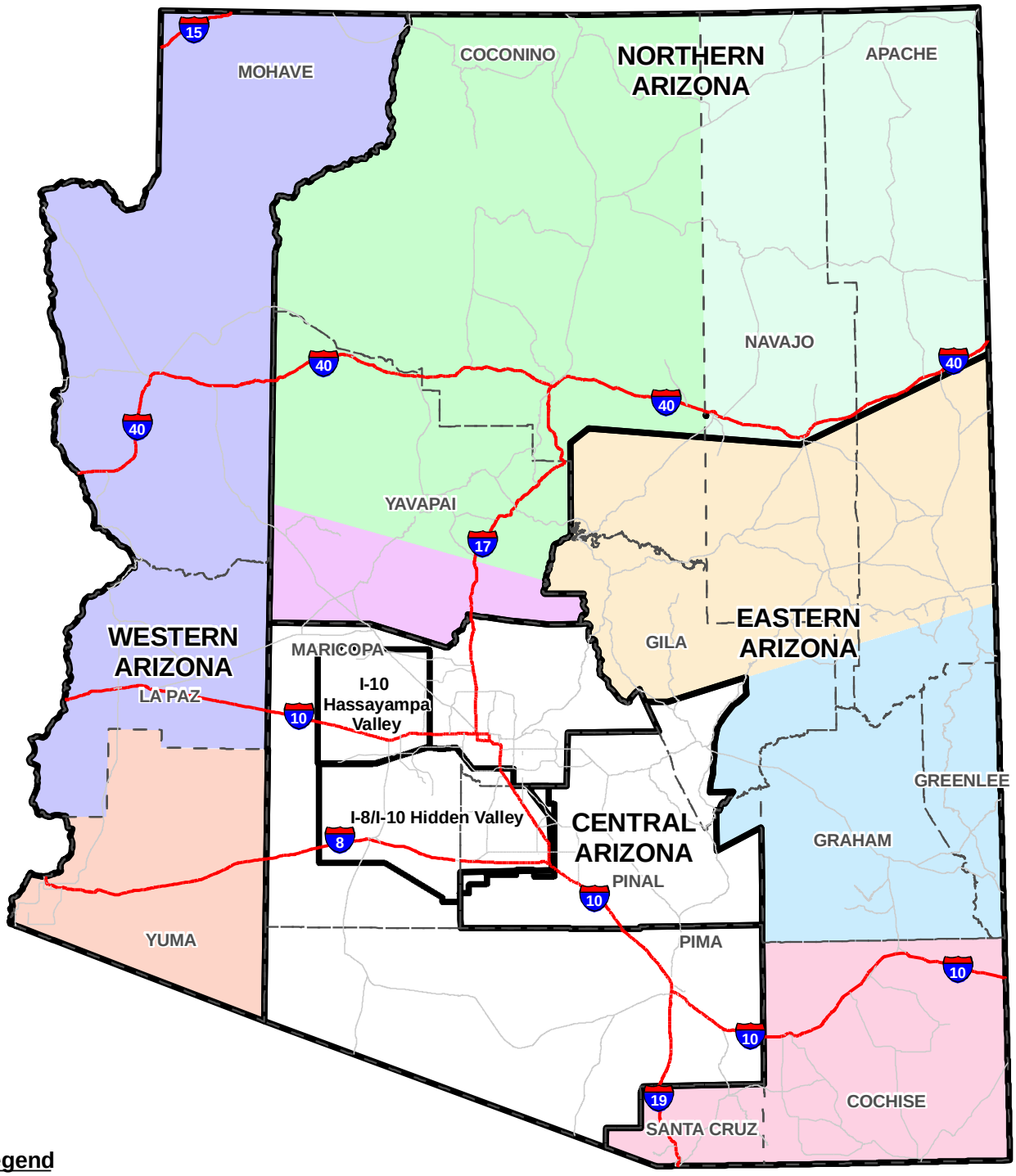
2.2 AZTDM Overview

The AZTDM includes nearly 1,100 internal traffic analysis zones and 35 external traffic analysis zones. A traffic analysis zone is a geographic area that the model uses to estimate travel. The roadway network includes all ADOT facilities as well as regionally significant roads. The definition of a regionally significant road varies by location. In Phoenix, for example, it is a key arterial in the urban grid. In northern Arizona on the Navajo Nation, it is a BIA route connecting remote villages.

The AZTDM uses a cross-classification trip generation model adapted from PAG that uses households, household size, and workers per household. The statewide model also forecasts truck trips using methodology from the FHWA Quick Response Freight Manual. Trip distribution is accomplished through a gravity model. Traffic assignment includes three modes – passenger car, single-unit trucks, and multiple-unit trucks. More detail on the AZTDM itself will be available in the calibration and validation report.

2.3 Socioeconomic Data Development

The ADOT Project Team relied on locally adopted or accepted planning studies to compile a statewide database of population and employment projections. For the state's urban areas, the study team compiled COG and MPO projections. The study team also relied on recently completed projections from Small Area Transportation Studies (SATS) and other studies. In some rural areas, the study team used DES projections to develop socioeconomic data.



Legend

- Cochise-Santa Cruz Focus Area
- Coconino-Yavapai Focus Area
- Copper Country Focus Area
- Mogollon Rim Focus Area
- Mohave-La Paz Focus Area
- Navajo-Hopi Focus Area
- New River Focus Area
- Yuma Valley Focus Area
- Framework Boundary
- County Boundary

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Figure 2-1
Framework Locations

NORTH 0 12.5 25 50 Miles

Plot Date: July 28, 2008

2.3.1 Model Geography

Development of STAZ geography was the first step in compiling the database of statewide socioeconomic projections. To readily transfer MPO and COG data to the AZTDM, the ADOT Project Team developed STAZ geography consistent with the state's urban models, including:

- Central Yavapai MPO model;
- Flagstaff MPO model;
- MAG model;
- PAG model;
- Pinal County Regionally Significant Routes model; and,
- Yuma MPO model.

Elsewhere, the STAZ geography is a refinement of the traffic analysis zones developed for the MAG's "Building a Quality Arizona" (bqAZ) Sketch Planning Tool. This is a high-level planning tool that provided initial estimates of 2030 and 2050 travel demand for the COG/MPO Statewide Reconnaissance Study. Other elements of the STAZ geography include county boundaries, census tract boundaries, roadways, rivers and other physical features. The STAZ geography reflects planned future roadways and is consistent with county and MPO boundaries.

Figures 2-2 to 2-16 show the STAZ geography by county. These maps also show land ownership, including federal, state, reservation, and private lands. Several of the figures show the checkerboard pattern of alternating public and private land associated with railroad land grants.